

Solid Tantalum Chip Capacitors TANTAMOUNT®, Molded Case, Built-In-Fuse Miniature



FEATURES

 Terminations: 100 % matte tin standard, tin/lead available



COMPLIANT

- Molded package available in three case codes
- · Compatible with "High Volume" automatic pick and place
- Electrically activated internal fuse
- ΕIA 535BAAC Meets **IEC** specification QC300801/US0001
- Fuse activation at 25 °C: 0.1 s max. with 5 A min. applied
- 100 % surge current tested (D and E case codes)
- Compliant to RoHS Directive 2002/95/EC
- Moisture sensitivity level 1

Pb containing terminations are not RoHS compliant, exemptions may apply

PERFORMANCE CHARACTERISTICS

www.vishay.com/doc?40088

Operating Temperature: - 55 °C to + 125 °C (Above 85 °C voltage derating is required)

Capacitance Range: 0.47 µF to 470 µF Capacitance Tolerance: ± 10 %, ± 20 %

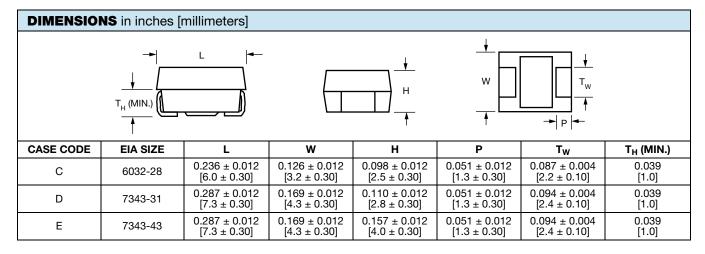
100 % Surge Current Tested (D and E case codes)

Voltage Rating: 4 V_{DC} to 50 V_{DC}

ORD	ORDERING INFORMATION							
893D	106 X0		010	В	2WE3			
TYPE	CAPACITANCE	CAPACITANCE TOLERANCE I	DC VOLTAGE RATING AT + 85 °C I	CASE CODE	TERMINATION AND PACKAGING			
	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow	X9 = ± 10 % X0 = ± 20 %	This is expressed in V. To complete the three-digit block, zeros precede the voltage rating. A decimal point is indicated by an "R" (6R3 = 6.3 V)	See Ratings and Case Codes table	2TE3: Matte tin, 7" (178 mm) reel 2WE3: Matte tin, 13" (330 mm) reel 8T: Tin/lead, 7" (178 mm) reel 8W: Tin/lead, 13" (330 mm) reel			

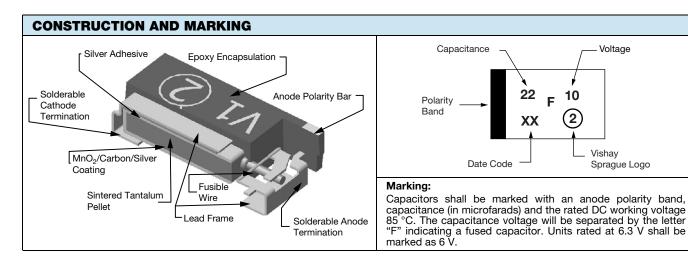
Note

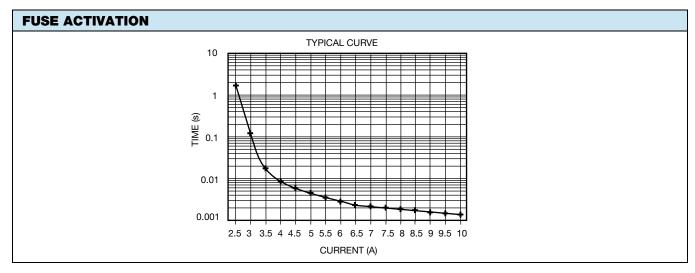
We reserve the right to supply higher voltage ratings and tighter capacitance tolerance capacitors in the same case size. Voltage substitutions will be marked with the higher voltage rating. Effective July 15, 2008, part numbers with solderable termination codes "2T" and "2W" may have either matte tin or tin/lead terminations. Codes 2TE3 and 2WE3 specify only matte tin terminations. Codes 8T and 8W specify only tin/lead terminations.



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RATINGS AND CASE CODES								
μF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V
0.47								С
0.68								С
1.0								С
1.5							С	С
2.2						C/D	С	C/D
3.3						С	С	C/D
4.7					С	С	C/D	D/E
6.8				С	С	С	D	D/E
10			С	С	С	C/D	D/E	
15		С	С	С	C/D	D	D/E	
22		С	С	C/D	D	D/E	Е	
33		С	C/D	C/D	D/E	Е		
47		C/D	C/D	D/E	Е			
68	С	C/D	D/E	D	E			
100	С	D/E	D	E				
150	D	D	D/E	E				
220	D	D/E	Е					
330	D/E	E						
470	Е							







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CAPACITANCE	CASE CODE	PART NUMBER	MAX. DC LEAKAGE	MAX. DF AT + 25 °C	MAX. ESR AT + 25 °C	MAX. RIPPLE 100 kHz
(μ F)	2		AT + 25 °C (μΑ)	120 Hz (%)	100 kHz (Ω)	I _{RMS} (A)
		4 V _{DC} AT + 85 °C	2.7 V _{DC} AT + 125			
68	С	893D686(1)004C(2)	2.7	6	1.4	0.28
100	С	893D107(1)004C(2)	4.0	8	0.8	0.37
150	D	893D157(1)004D(2)	6.0	8	0.6	0.50
220	D	893D227(1)004D(2)	8.8	8	0.6	0.50
330	D	893D337(1)004D(2)	13.2	15	0.6	0.50
330	Е	893D337(1)004E(2)	13.2	8	0.5	0.57
470	Е	893D477(1)004E(2)	18.8	16	0.5	0.57
		6.3 V _{DC} AT + 85 °	C; 4 V _{DC} AT + 125	°C		
15	С	893D156(1)6R3C(2)	0.9	6	1.8	0.25
22	С	893D226(1)6R3C(2)	1.1	6	1.8	0.25
33	С	893D336(1)6R3C(2)	1.6	6	1.4	0.28
47	С	893D476(1)6R3C(2)	2.3	6	1.3	0.29
47	D	893D476(1)6R3D(2)	2.3	6	0.9	0.41
68	С	893D686(1)6R3C(2)	3.3	6	0.8	0.37
68	D	893D686(1)6R3D(2)	3.3	6	0.7	0.46
100	D	893D107(1)6R3D(2)	6.0	8	0.7	0.46
100	Е	893D107(1)6R3E(2)	6.0	8	0.7	0.49
150	D	893D157(1)6R3D(2)	9.0	8	0.6	0.50
220	D	893D227(1)6R3D(2)	13.2	8	0.6	0.50
220	Е	893D227(1)6R3E(2)	13.2	8	0.5	0.57
330	Е	893D337(1)6R3E(2)	19.8	8	0.5	0.57
		10 V _{DC} AT + 85 °C	C; 7 V _{DC} AT + 125	°C		
10	С	893D106(1)010C(2)	1.0	6	1.8	0.25
15	С	893D156(1)010C(2)	1.5	6	1.8	0.25
22	С	893D226(1)010C(2)	2.2	6	1.4	0.28
33	С	893D336(1)010C(2)	3.3	6	1.3	0.29
33	D	893D336(1)010D(2)	3.3	6	0.9	0.41
47	С	893D476(1)010C(2)	4.7	6	1.0	0.33
47	D	893D476(1)010D(2)	4.7	6	0.7	0.46
68	D	893D686(1)010D(2)	6.8	6	0.7	0.46
68	Е	893D686(1)010E(2)	6.8	6	0.7	0.49
100	D	893D107(1)010D(2)	10.0	8	0.6	0.50
150	D	893D157(1)010D(2)	15.0	8	0.6	0.50
150	Е	893D157(1)010D(2)	15.0	8	0.5	0.57
220	Е	893D227(1)010E(2)	22.0	8	0.5	0.57
		16 V _{DC} AT + 85 °C	; 10 V _{DC} AT + 125	°C		
6.8	С	893D685(1)016C(2)	1.1	6	2.0	0.23
10	С	893D106(1)016C(2)	1.6	6	1.8	0.25
15	С	893D156(1)016C(2)	2.4	6	1.4	0.28
22	С	893D226(1)016C(2)	3.5	6	1.3	0.29
22	D	893D226(1)016D(2)	3.5	6	0.9	0.41
33	С	893D336(1)016C(2)	5.3	6	1.0	0.33
33	D	893D336(1)016D(2)	5.3	6	0.7	0.46
47	D	893D476(1)016D(2)	7.5	6	0.7	0.46
47	E	893D476(1)016E(2)	7.5	6	0.7	0.49
68	D	893D686(1)016D(2)	10.9	6	0.6	0.50
100	E	893D107(1)016E(2)	16.0	8	0.6	0.52
150	Е	893D157(1)016E(2)	24.0	10	0.4	0.64

Note

- Part number definitions:
 - (1) Tolerance: X0, X9
 - (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W

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CAPACITANCE (µF) CASE CODE PART NUMBER (µF) LEAKAGE AT +25° C 120 kg. (%) AT +25° C 100 kHz (100 kH	STANDARD R	ATINGS					
### ### ### ### ### ### ### ### ### ##		CASE CODE	PART NUMBER	LEAKAGE AT + 25 °C	AT + 25 °C 120 Hz	AT + 25 °C 100 kHz	I _{RMS}
4.7 C 883D475(1)200(2) 0.9 6 2.0 0.22 6.8 C 883D85(1)200(2) 1.4 6 1.9 0.24 10 C 893D106(1)200(2) 2.0 6 1.6 0.26 15 C 893D106(1)200(2) 3.0 6 1.4 0.28 15 D 893D156(1)200(2) 3.0 6 0.9 0.41 22 D 893D226(1)200(2) 4.4 6 0.7 0.46 33 D 893D36(1)200(2) 6.6 6 0.7 0.46 33 E 893D36(1)200(2) 6.6 6 0.7 0.46 33 E 893D36(1)200(2) 6.6 6 0.7 0.46 33 E 893D36(1)200(2) 6.6 6 0.7 0.49 477 E 893D476(1)200(2) 13.0 6 0.6 0.5 2 2 C 893D225(1)225(2) 13.0 6 0.6 0.5 2 2 C 893D225(1)225(2) 13.0 6 0.6 0.5 2 2 C 0 893D225(1)225(2) 13.0 6 0.6 0.5 2 2 C 0 893D225(1)225(2) 0.6 6 2.8 0.21 2 3.3 C 893D35(1)205(2) 1.2 6 1.9 0.24 4.7 C 893D475(1)205(2) 1.2 6 1.9 0.24 6.8 C 893D86(1)205(2) 1.7 6 1.6 0.26 6.8 C 893D86(1)205(2) 1.7 6 1.6 0.26 6.8 C 893D86(1)205(2) 2.5 6 1.4 0.28 10 C 893D106(1)255(2) 2.5 6 1.0 0.39 15 D 883D156(1)205(2) 3.8 6 0.8 15 D 883D156(1)205(2) 3.8 6 0.8 22 D 883D226(1)205(2) 1.2 6 1.0 0.39 15 D 883D16(1)205(2) 1.2 6 0.0 0.39 15 D 883D16(1)205(2) 1.7 6 1.6 0.26 10 C 893D106(1)255(2) 2.5 6 1.0 0.39 15 D 883D156(1)205(2) 1.7 6 1.6 0.26 10 D 883D16(1)205(2) 2.5 6 1.0 0.39 15 D 883D16(1)205(2) 2.5 6 0.7 0.46 22 E 893D226(1)205(2) 3.8 6 0.8 0.43 22 D 883D226(1)205(2) 3.8 6 0.8 0.43 3 E 893D336(1)205(2) 3.5 6 0.7 0.49 3 S E 893D36(1)205(2) 8.3 6 0.6 0.7 0.49 3 S E 893D36(1)205(2) 8.3 6 0.6 0.7 0.49 3 S E 893D36(1)205(2) 8.3 6 0.7 0.49 4.7 C 893D47(1)305(2) 1.2 6 0.3 0.7 0.49 4.7 C 893D47(1)305(2) 1.5 6 0.3 0.7 0.49 4.7 C 893D47(1)305(2) 1.5 6 0.8 0.7 0.49 4.7 C 893D47(1)305(2) 1.5 6 0.8 0.7 0.49 4.7 C 893D47(1)305(2) 1.5 6 0.8 0.7 0.49 4.7 C 893D47(1)305(2) 1.6 6 1.2 0.35 4.7 C 893D47(1)305(2) 1.6 6 1.2 0.35 4.7 C 893D47(1)305(2) 1.6 6 1.2 0.35 4.7 C 893D47(1)305(2) 1.6 6 1.8 0.25 4.7 C 893D47(1)305(2) 1.6 6 1.8 0.2 0.20 3.3 C 893D33(1)305(2) 1.6 6 1.2 0.3 0.20 3.3 C 893D33(1)305(2) 1.6 6 1.6 0.7 0.49 4.7 C 893D47(1)305(2) 1.6 6 0.8 0.7 0.49 4.7 C 893D47(1)305(2) 1.7 6 0.6 0.8 0.7 0.49 4.7 C 893D47(1)305(2) 1.7 6 0.6 0.8 0.7			20 V _{DC} AT + 85 °C	** *			
6.8	4.7	С				2.0	0.22
10			, , , , ,	1.4			
15			, , , , ,				
16			(, , , ,				
22 D 893D226(1)02DD(2) 4.4 6 0.7 0.46 33 D 893D336(1)02D(2) 6.6 6 0.7 0.46 33 E 893D336(1)02D(2) 6.6 6 0.7 0.49 47 E 893D476(1)02DE(2) 9.4 6 0.6 0.6 0.52 2							
33 D 8830336(1)020D(2) 6.6 6 0.7 0.49 33 E 893036(1)020E(2) 9.4 6 0.6 0.52 68 E 8930668(1)020E(2) 13.6 6 0.6 0.52 25 V _{DC} AT + 85 °C; 17 V _{DC} AT + 125 °C 2.2 C 8930226(1)025D(2) 0.6 6 2.8 0.21 2.2 D 8930226(1)025D(2) 0.6 6 2.8 0.21 2.3 C 8930236(1)025D(2) 0.6 6 2.8 0.21 2.3 C 8930236(1)025D(2) 0.6 6 2.8 0.21 2.3 C 8930236(1)025D(2) 0.6 6 2.8 0.21 2.4 C 893026(1)025D(2) 0.6 6 2.3 0.22 4.7 C 893026(1)025D(2) 1.2 6 1.9 0.24 6.8 C 893066(1)025D(2) 1.7 6 1.6 0.26 6.8 C 893066(1)025D(2) 1.7 6 1.6 0.26 10 C 8930106(1)025D(2) 2.5 6 1.4 0.28 11 D D 8930106(1)025D(2) 2.5 6 1.4 0.28 12 D 8930226(1)025D(2) 3.8 6 0.8 0.43 22 D 8930226(1)025D(2) 3.8 6 0.6 0.7 0.46 22 E 8930226(1)025D(2) 5.5 6 0.7 0.49 33 E 8930336(1)025E(2) 8.3 6 0.6 0.52 1.5 C 8930156(1)025D(2) 8.3 6 0.6 0.52 1.5 C 8930156(1)035D(2) 8.3 6 0.6 0.52 1.5 C 8930156(1)035D(2) 8.3 6 0.6 0.52 1.5 C 8930156(1)035D(2) 8.3 6 0.6 0.9 0.23 4.7 C 8930156(1)035D(2) 1.6 6 1.8 0.25 4.7 D 8930156(1)035D(2) 1.6 6 1.2 0.35 6.8 D 8930156(1)035D(2) 3.5 6 0.8 0.43 10 D 8930156(1)035D(2) 3.5 6 0.8 0.43 10 D 8930156(1)035D(2) 5.3 6 0.7 0.49 11 D D 8930156(1)035D(2) 5.3 6 0.7 0.49 12 E 8930156(1)035D(2			, , , , ,				
Section Sect			` , ` , '				
47 E 893D486(1)02DE(2) 9.4 6 0.6 0.52			, , , , ,				
68 E 8930686(1)020E(2) 13.6 6 0.6 0.52 25 V _{DC} ATT + 85°C; 17 V _{DC} ATT + 125°C 2.2 C 8930225(1)025D(2) 0.6 6 2.8 0.21 2.2 D 893D235(1)025D(2) 0.6 6 2.0 0.21 3.3 C 893D335(1)025C(2) 1.2 6 1.9 0.24 4.7 C 893D45(1)025C(2) 1.7 6 1.6 0.26 10 C 893D106(1)025D(2) 2.5 6 1.4 0.28 10 D 893D156(1)025D(2) 3.8 6 0.8 0.43 22 D 893D226(1)025D(2) 5.5 6 0.7 0.46 22 E 893D226(1)025E(2) 5.5 6 0.7 0.49 33 E 893D236(1)025E(2) 8.3 6 0.6 0.52 35 V _{DC} AT + 85°C; 23 V _{DC} AT + 125°C 1.5 6 3.8 0.17 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
25 V _{De} AT + 85 °C; 17 V _{De} AT + 125 °C			() ()				
2.2 C 893D225(1)025C(2) 0.6 6 2.8 0.21 2.2 D 893D225(1)025D(2) 0.6 6 2.0 0.21 3.3 C 893D335(1)025C(2) 0.8 6 2.0 0.21 4.7 C 893D475(1)025C(2) 1.2 6 1.9 0.24 6.8 C 893D685(1)025C(2) 1.7 6 1.6 0.26 6.8 C 893D685(1)025C(2) 1.7 6 1.6 0.26 10 C 893D106(1)025C(2) 2.5 6 1.0 0.39 11 D B 893D106(1)025D(2) 2.5 6 1.0 0.39 12 D 893D105(1)025D(2) 3.8 6 0.8 0.43 13 E 893D226(1)025E(2) 5.5 6 0.7 0.49 13 E 893D226(1)025E(2) 5.5 6 0.7 0.49 13 E 893D336(1)025E(2) 5.5 6 0.7 0.49 15 C 893D155(1)025E(2) 5.5 6 0.7 0.49 16 E 893D336(1)025E(2) 5.5 6 0.7 0.49 17 E 893D225(1)035C(2) 0.8 6 2.9 0.20 18 E 893D336(1)035C(2) 0.8 6 2.9 0.20 18 E 893D335(1)035C(2) 1.2 6 2.0 0.23 18 E 893D35(1)035C(2) 1.2 6 2.0 0.23 18 E 893D3475(1)035C(2) 1.6 6 1.8 0.25 18 E 893D475(1)035D(2) 1.6 6 1.8 0.25 18 E 893D106(1)035D(2) 1.6 6 1.8 0.25 18 E 893D106(1)035D(2) 3.5 6 0.8 0.43 15 D 893D485(1)035D(2) 3.5 6 0.8 0.43 15 D 893D106(1)035D(2) 3.5 6 0.8 0.43 15 E 893D106(1)035D(2) 3.5 6 0.8 0.43 15 D 893D106(1)035D(2) 3.5 6 0.8 0.43 15 E 893D106(1)035D(2) 3.5 6 0.8 0.43 16 E 893D106(1)035D(2) 3.5 6 0.8 0.43 17 C 893D105(1)035D(2) 3.5 6 0.8 0.43 18 0.4 6 0.7 0.49 19 22 E 893D225(1)05D(2) 1.1 6 0.2 0.5 0.4 0.6 0.52 19 0.4 0.4 0.5 0.5 0.5 0.5 0.5 0.6 0.8 0.43 10 0 0 0 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5							
2.2 D 893D225(1)025D(2) 0.6 6 2.0 0.21 3.3 C 893D335(1)025C(2) 0.8 6 2.3 0.22 4.7 C 893D475(1)025C(2) 1.2 6 1.9 0.24 6.8 C 893D685(1)025C(2) 1.7 6 1.6 0.26 10 C 893D106(1)025C(2) 2.5 6 1.4 0.28 10 D 893D106(1)025D(2) 2.5 6 1.0 0.39 15 D 893D155(1)025D(2) 3.8 6 0.8 0.43 22 D 893D226(1)025D(2) 3.8 6 0.8 0.43 22 E 893D226(1)025D(2) 5.5 6 0.7 0.46 22 E 893D236(1)025E(2) 8.3 6 0.6 0.5 22 E 893D236(1)025E(2) 8.3 6 0.6 0.52 23 S V _{DC} AT + 85 °C; 23 V _{DC} AT + 125 °C 1.5 C 893D135(1)035C(2) 0.5 6 3.8 0.17 2.2 C 893D235(1)035C(2) 1.2 6 2.0 0.23 4.7 C 893D335(1)035C(2) 1.6 6 1.8 0.25 4.7 D 893D475(1)035D(2) 1.6 6 1.8 0.25 4.7 D 893D475(1)035D(2) 2.4 6 1.0 0.99 10 D 893D106(1)035D(2) 3.5 6 0.8 0.43 115 D 893D106(1)035D(2) 3.5 6 0.8 0.8 0.8 0.43 115 D 893D106(1)035D(2) 3.5 6 0.8 0.8 0.8 0.43 115 D 893D106	2.2	С				2.8	0.21
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Note

- Part number definitions: (1) Tolerance: X0, X9

 - (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W



Vishay Sprague

DARD CONDITIONS. FOR EXAMPLE: OUTPUT FILTERS	
Capacitor Voltage Rating	Operating Voltage
4.0	2.5
6.3	3.6
10	6.0
16	10
20	12
25	15
35	24
50	28
ERE CONDITIONS. FOR EXAMPLE: INPUT FILTERS	
Capacitor Voltage Rating	Operating Voltage
4.0	2.5
6.3	3.3
10	5.0
16	8.0
20	10
25	12
35	15
50	24

POWER DISSIPATION				
CASE CODE	MAXIMUM PERMISSIBLE POWER DISSIPATION AT + 25 °C (W) IN FREE AIR			
С	0.110			
D	0.150			
E	0.165			

STANDARD PACKAGING QUANTITY					
CASE CODE	UNITS PER REEL				
CASE CODE	7" REEL	13" REEL			
С	500	3000			
D	500	2500			
E	400	1500			

PRODUCT INFORMATION				
Molded Guide • Pad Dimensions • Package Dimensions	www.vishay.com/doc?40074			
Moisture Sensitivity	www.vishay.com/doc?40135			
SELECTOR GUIDES				
Solid Tantalum Selector Guide	www.vishay.com/doc?49053			
Solid Tantalum Chip Capacitors	www.vishay.com/doc?40091			
FAQ				
Frequently Asked Questions	www.vishay.com/doc?40110			



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